

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
23 June 2005 (23.06.2005)

PCT

(10) International Publication Number  
**WO 2005/057172 A2**

- (51) International Patent Classification<sup>7</sup>: **G01N**
- (21) International Application Number:  
PCT/US2004/040879 ✓
- (22) International Filing Date: 6 December 2004 (06.12.2004) ✓
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:  
60/527,411 5 December 2003 (05.12.2003) US ✓  
60/580,176 15 June 2004 (15.06.2004) US ✓
- (71) Applicant (for all designated States except US): **THE BOARD OF TRUSTEES OF THE LELAND STANFORD JUNIOR UNIVERSITY** [US/US]; 1705 El Camino Real, Palo Alto, California 94306-1106 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **JAMIESON, Catri-ona Helen M.** [CA/US]; 425 Homer Avenue, Palo Alto, California 94301-2821 (US). **AILLES, Laurie** [US/US]; 5324 Pathology, Stanford, California 94304 (US). **WEISSMAN, Irving L.** [US/US]; 4147 Jefferson Avenue, Redwood City, California 94061 (US).
- (74) Agent: **SHERWOOD, Pamela, J.; BOZICEVIC, FIELD & FRANCIS LLP**, 1900 University Avenue, Suite 200, East Palo Alto, California 94303 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NL, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

**Published:**

— without international search report and to be republished upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: IDENTIFICATION, ISOLATION AND ELIMINATION OF CANCER STEM CELLS ✓

(57) Abstract: Isolated populations of leukemic stem cells are provided. The cells are useful for experimental evaluation, and as a source of lineage and cell specific products, and as targets for the discovery of factors or molecules that can affect them. Detection of leukemic stem cells is useful in predicting disease progression, relapse, and development of drug resistance. Proliferation of LSC may be inhibited through interfering with activation of the bcr/abl pathway. Methods are provided for the clinical staging of pre-leukemia and leukemias by differential analysis of hematologic samples for the distribution of one or more hematopoietic stem or progenitor cell subsets.



WO 2005/057172 A2